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DATA SHEET

ESL NO.. :ESS-5050RGB-PL

CUSNO.. :

REV : A / 0

Producer: 蔡书艺

Auditor: _____

Approver: 陆志勇

CUSTOMER'S APPROVAL : _____

DCC : _____



5.0 × 5.0 × 1.6 mm SMD LED

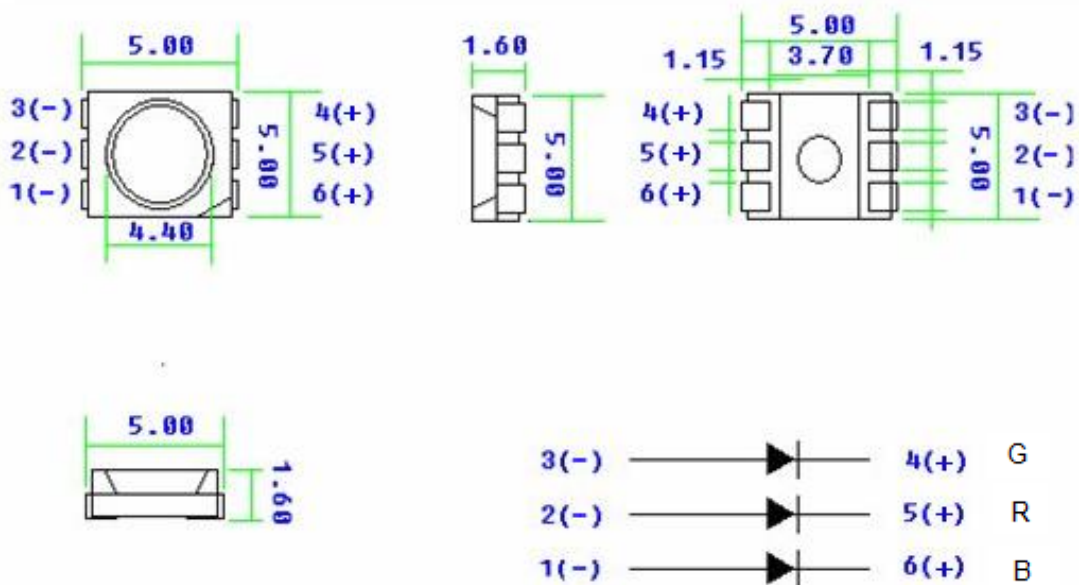
ESS-5050RGB-PL

REV:A / 0

※ Features:

- 1.Package: 5.0 × 5.0 × 1.6 mm
- 2.Color : Ultra Bright RGB Full Color
- 3.Lens: Water Clear Flat Mold
- 4.Mono-color type
- 5.Soldering methods: All SMT assembly methods
- 6.Compliant ROHS standard.

※ Package Outline Dimension:



NOTES:

- 1. All dimensions are in millimeters (inches).
- 2. Tolerance is ±0.10mm unless otherwise specified.
- 3. Specifications are subject to change without notice.



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ESS-5050RGB-PL

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※ Absolute Maximum Ratings(Ta=25°C)

| Symbol | Parameter | R | G/B | UNIT |
|-------------|--|------------------------|-----|-----------|
| PAD | Power Dissipation | 50 | 60 | <u>mW</u> |
| VR | Reverse Voltage | 5 | 5 | V |
| IF | Average Forward Current(Duty-0.1,1KHZ) | 20 | 20 | <u>mA</u> |
| <u>Topr</u> | Operating Temperature Range | -25°C to 75°C | | |
| <u>Tstg</u> | Storage Temperature Range | -30°C to 80°C | | |
| <u>Tsol</u> | Solder temperature | 3 seconds under 260 °C | | |



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※ Electrical-optical characteristics(Ta=25°C)

| SYMBOL | DESCRIPTION | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|--------|----------------------|----------------|-------|------|------|------|-----|
| Vf | Forward Voltage | IF=20mA | Green | 2.9 | | 3.3 | V |
| | | | Blue | 2.9 | | 3.3 | |
| | | | Red | 1.9 | | 2.2 | |
| IR | Reverse Current | VR=5 V | Green | | | 10 | μA |
| | | | Blue | | | 10 | |
| | | | Red | | | 10 | |
| λD | Dominant Wavelength | IF=20mA | Green | 520 | | 530 | nm |
| | | | Blue | 465 | | 470 | |
| | | | Red | 620 | | 630 | |
| 2θ 1/2 | Half Intensity Angle | IF=20mA | G/R/B | | 150 | deg | |
| IV | Luminous Intensity | IF=20mA | Green | 600 | | 800 | mcd |
| | | | Blue | 200 | | 400 | |
| | | | Red | 300 | | 500 | |



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※ Typical Electro-Optical Characteristics Curves

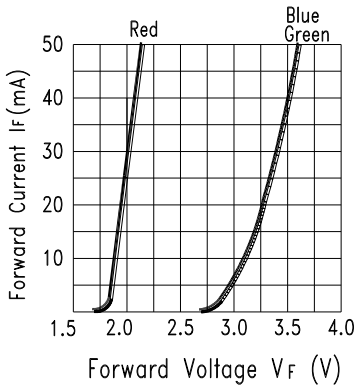
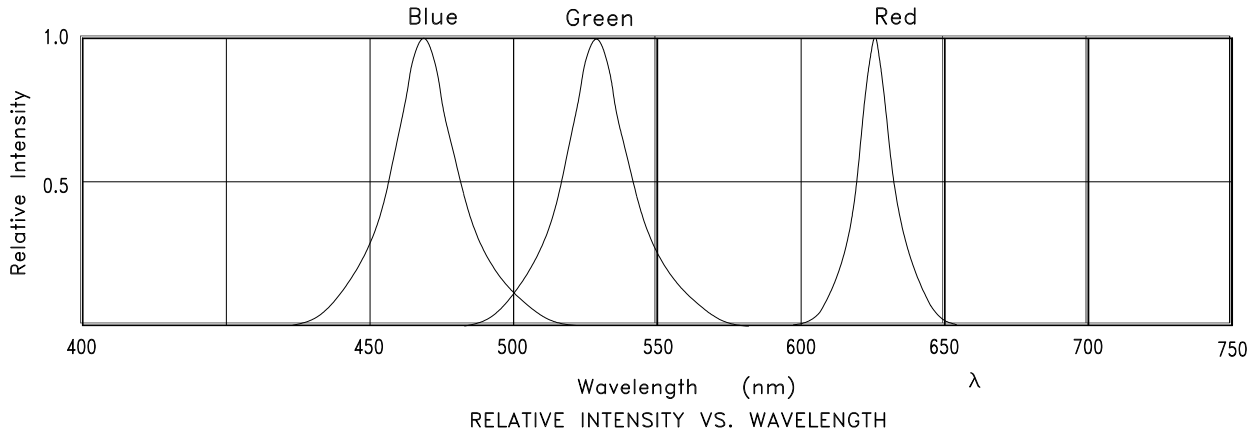


Fig.2 Forward Current vs. Forward Voltage

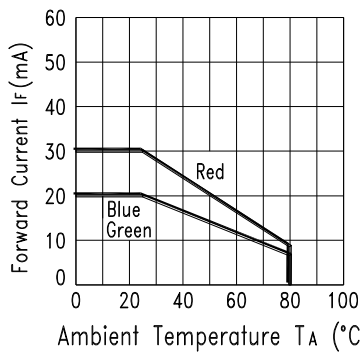


Fig.3 Forward Current Derating Curve

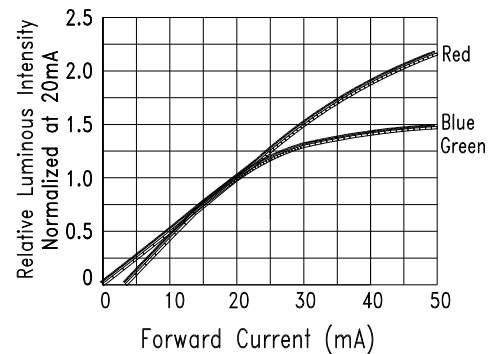


Fig.4 Relative Luminous Intensity vs. Forward Current

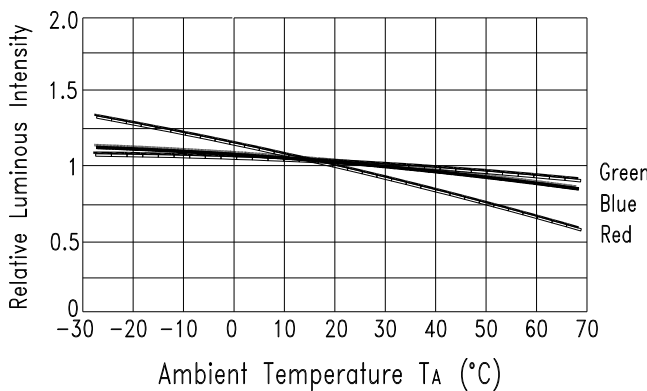


Fig.5 Luminous Intensity vs. Ambient Temperature

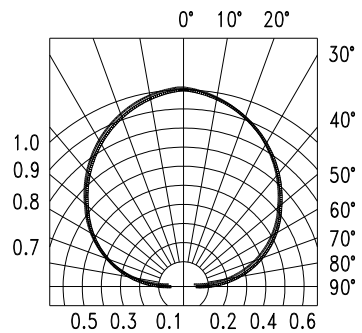


Fig.6 Spatial Distribution



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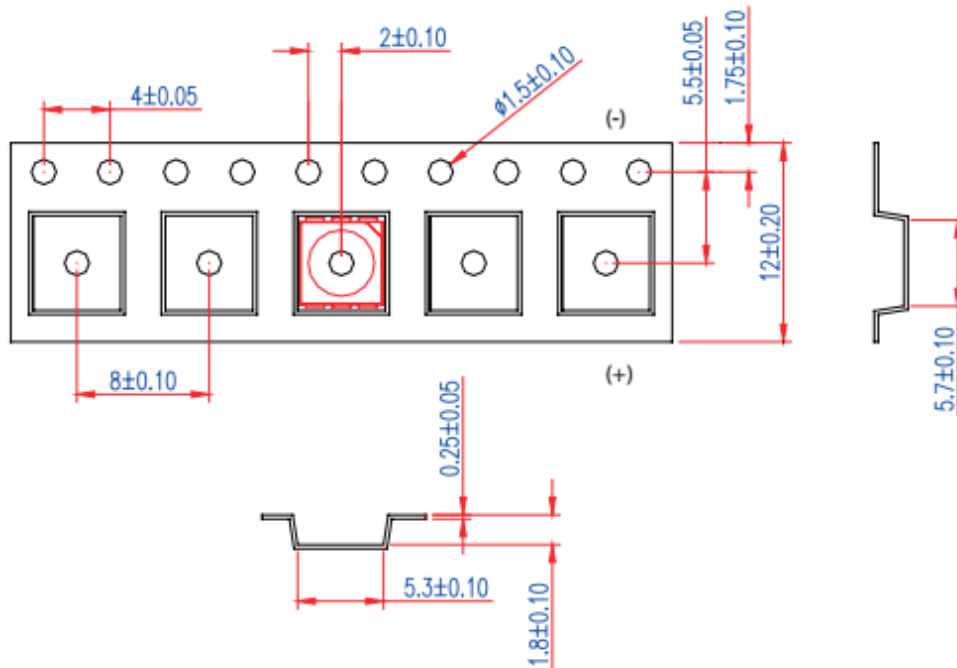
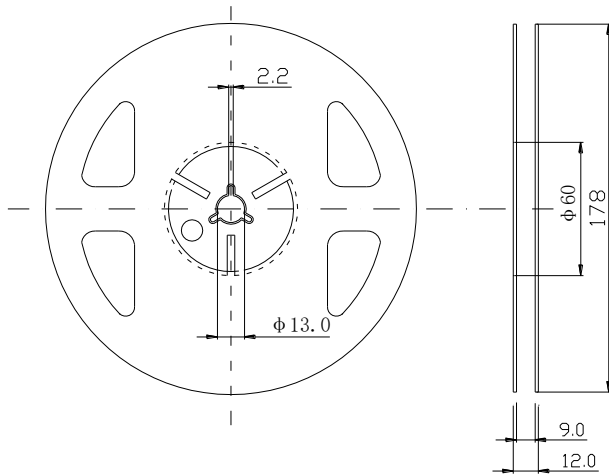
※ Label explanation

CAT: Luminous Intensity Rank (unit : mcd)

HUE: Wavelength Rank (unit : nm)

REF: Forward Voltage Rank (unit : V)

※ Reel Dimensions





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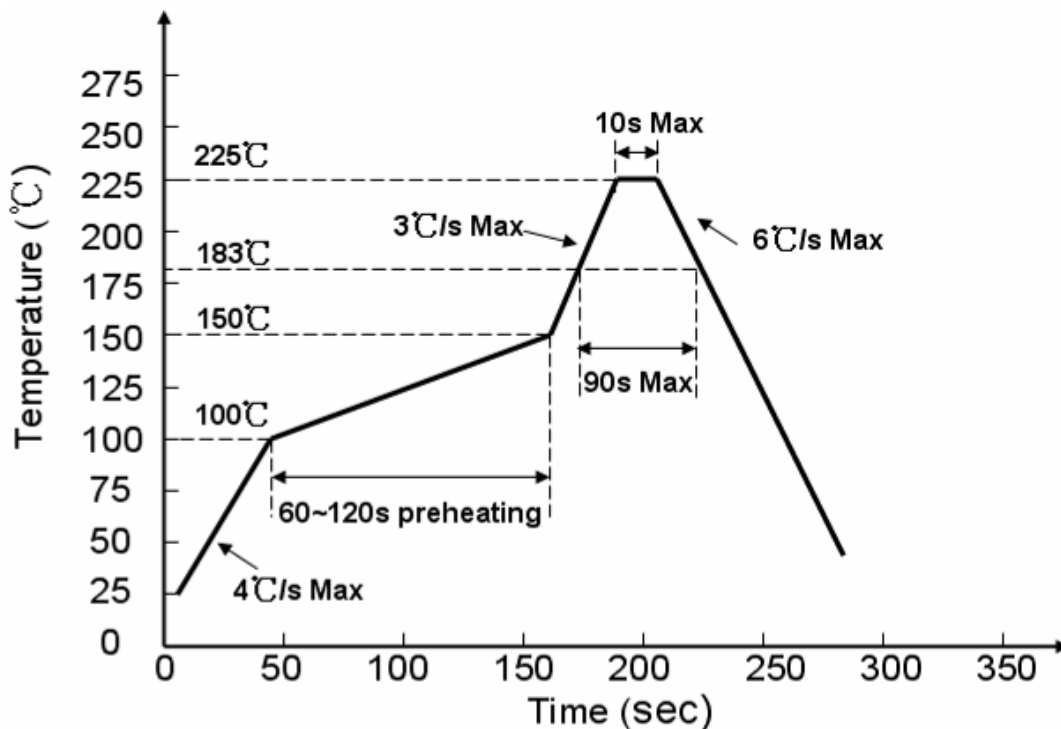
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※ Precautions for use :

1. Customer must apply the current limiting resistor in the circuit so as to drive the LEDs within the rated current. Otherwise slight voltage shift maybe will cause big current change and burn out will happen.
2. Also, caution should be taken not to overload the LEDs with instantaneous high voltage at the turning ON and OFF of the circuit.
3. Storage:
 - 3.1 Don't open the moisture proof bag before ready to use the LEDs.
 - 3.2 The LEDs should be kept at 30°C or less and 60%RH or less before opening the package. The max. storage period before opening the package is 1 year.
 - 3.3 After opening the package, the LEDs should be kept at 30°C/35%RH or less, and it should be used within 7 days.
 - 3.4 If the LEDs be kept over the conditions of 3.4, baking is required before mounting. Baking condition as below: 60±5°C for 12 hrs.
4. Soldering condition:

4.1 Lead Solder:



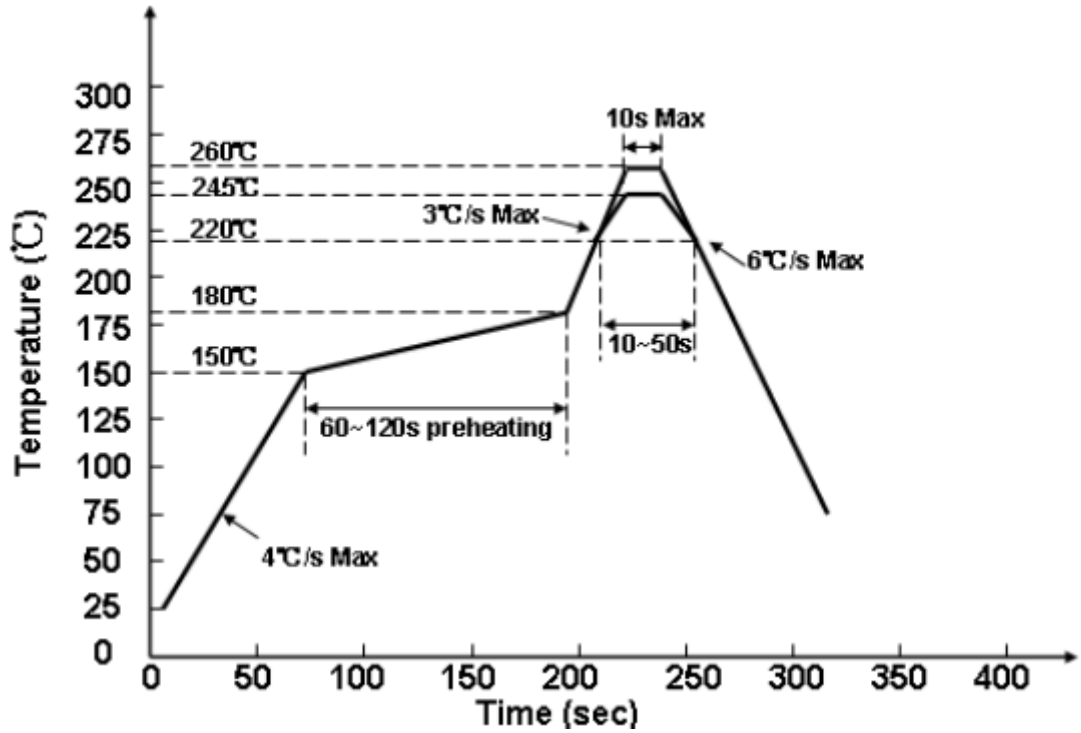


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4.2 Lead Free Solder:



Note:

- 1.Reflow soldering should not be done more than two times.
- 2. Don't put stress on the LEDs when soldering.
- 3.Don't warp the circuit board before it have been returned to normal ambient conditions after soldering

